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#192	- 30th	Ann. Rpt.	1918	OK - RBS	4/10/42
# 198	- 31/32	Ann. Rpts	1919/1920		
# 203	- 33d	Ann. Rpt	1921		
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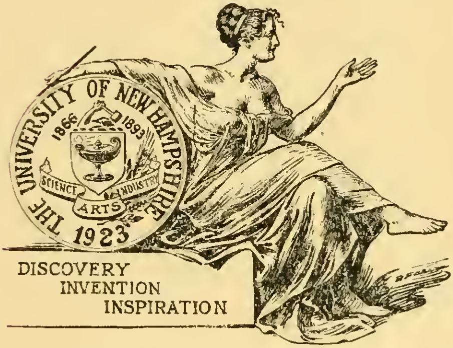

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Bulletin No. 194 September, 1919

NEW HAMPSHIRE
AGRICULTURAL EXPERIMENT STATION

DEPARTMENT OF CHEMISTRY

INSPECTION OF COMMERCIAL FERTILIZERS FOR 1919

MADE FOR THE
STATE DEPARTMENT OF AGRICULTURE

1784

By T. O. Smith

NEW HAMPSHIRE COLLEGE
OF
AGRICULTURE AND THE MECHANIC ARTS
DURHAM, N. H.

Inspection of Commercial Fertilizers

THE FERTILIZER LAW.

An Act to Regulate the Sale of Commercial Fertilizers enacted by the New Hampshire legislature of 1901 and amended by the legislature of 1915 authorizes the Commissioner of Agriculture, Mr. Andrew L. Felker, to direct an annual collection of samples of commercial fertilizers offered for sale in the state and to have these samples analyzed at the New Hampshire Agricultural Experiment Station.

A copy of this law follows:—

STATE OF NEW HAMPSHIRE.

Chapter 43, Session Laws of 1901, as Amended by Chapter 81, Session Laws of 1915.

AN ACT TO REGULATE THE SALE OF FERTILIZERS.

SECTION 1. Every lot or parcel of commercial fertilizer or fertilizer material sold or offered or exposed for sale within this state shall be accompanied by a plainly printed statement, clearly and truly certifying the number of net pounds of fertilizer in the package, the name, brand, or trademark under which the fertilizer is sold, the name and address of the manufacturer or importer, the location of the factory, and a chemical analysis stating the percentage of nitrogen, of potash soluble in distilled water, of phosphoric acid in available form soluble in distilled water, and reverted, and of total phosphoric acid.

SECT. 2. Before any commercial fertilizer is sold or offered or exposed for sale, the manufacturer, importer or party who causes it to be sold or offered for sale, within this state shall file with the commissioner of agriculture a certified copy of the statement named in section 1 of this act, and shall also deposit with said commissioner, at his request, a sealed glass jar or bottle containing not less than one pound of the fertilizer, accompanied by an affidavit that it is a fair average sample thereof.

SECT. 3. The manufacturer, importer, agent, or seller of any brand of commercial fertilizer or fertilizer material shall pay for each brand on or before the first day of March, annually, to the commissioner of agriculture an analysis fee, as follows, namely: ten dollars for the phosphoric acid, five dollars for the nitrogen, and five dollars for the potash, contained or claimed to be in the said brand of fertilizer, but the fee for any brand shall not exceed fifteen dollars; *provided,* that whenever the manufacturer or importer shall have paid the fee herein required, any person acting as agent or seller for such manufacturer or importer shall not be required to pay the fee named in this section.

Sect. 4. No person shall sell, or offer or expose for sale, in this state, in any form as a fertilizer, any pulverized leather, hair or wool waste, raw, steamed or roasted, or peat, garbage tankage, or any inert material whatsoever, without an explicit printed certificate of the fact conspicuously fixed to every package of such fertilizer.

[Approved March 8, 1917.]

Sect. 5. Any person selling or offering or exposing for sale any commercial fertilizer without the statement required by the first section of this act, or with a label stating that said fertilizer contains a larger percentage of any one or more of the constituents mentioned in said section than is contained therein, or respecting the sale of which all the provisions of the foregoing sections have not been fully complied with, shall forfeit fifty dollars for the first offense and one hundred dollars for each subsequent offense.

Sect. 6. This act shall not affect parties manufacturing or importing fertilizer for their own use and not to sell in this state.

Sect. 7. The commissioner of agriculture shall annually cause to be analyzed at the New Hampshire College Agricultural Experiment Station one or more samples of every commercial fertilizer or fertilizer material sold or offered for sale under the provisions of this act. Said commissioner shall cause a sample to be taken, not exceeding two pounds in weight, for said analysis, from any lot or package of such fertilizer or fertilizer material which may be in the possession of any manufacturer, importer, agent, or dealer in this state; but said sample shall be drawn in the presence of the parties in interest or their representatives and taken from a parcel or a number of packages, which shall not be less than ten per cent. of the whole lot sampled and shall be thoroughly mixed and then divided into equal samples and placed in glass vessels and carefully sealed and a label placed on each, stating the name or brand of the fertilizer or material sampled, the name of the party from whose stock the sample was drawn, and the time and place of drawing, and said label shall also be signed by the person taking the sample and by the party or parties in interest, or their representative present at the drawing and sealing of said samples; one of said duplicate samples shall be retained by the commissioner and the other by the party whose stock was sampled, and the sample retained by the commissioner shall be for comparison with the certified statement named in section 1. The result of the analysis of the samples shall be published from time to time, together with such additional information as circumstances may advise, in reports of bulletins by the commissioner of agriculture or by the New Hampshire College Agricultural Experiment Station as the governor and council may determine. All parties violating this act shall be prosecuted by the commissioner of agriculture.

Sect. 8. The amount of license fees received by said commissioner by virtue of this act shall be paid by him to the treasurer of the State of New Hampshire. The treasurer of the State of New Hampshire shall pay from such amount, when duly approved, the moneys required for the expense incurred in making the inspection required by this act and enforcing the provisions thereof. Said expenses shall include those incurred for laboratory expenses, chemical supplies, traveling expenses, printing, and other necessary matters.

Sect. 9. This act shall take effect upon its passage.

COLLECTION OF SAMPLES.

The inspector, Mr. Eugene D. Sanborn, covered the greater part of the state and collected samples of 110 different brands. These samples are offered for sale by 22 manufacturers, including their different branch factories, and may be classified as follows:

Complete fertilizers	36
Ammoniated superphosphates	55
Plain superphosphates	5
Ground bone	4
Dried blood	1
Tankage	1
Nitrate of soda	1
Muriate of potash	1
Miscellaneous	6
	110

BRAND NAMES.

The law requires that each package or lot of fertilizer offered for sale shall be sold under a distinguishing name, brand or trademark. This means of identification of a particular brand gives the manufacturer an opportunity to give to each brand which he manufactures a name indicative of the material of which it is composed, or of the particular crop to which it is best adapted. Unfortunately instead of taking advantage of this opportunity to give the consumer valuable information he very often abuses it by giving to his different brands, names which are intended to attract the attention of the consumer but which are partially or wholly misleading. A study of the brand names of the fertilizers in the following pages shows that only about 10% of the brands have names which indicate even fairly accurately the particular crop to which the fertilizer is best adapted while about 45% have names either entirely misleading or at least deserving of no especial consideration. About 20% of the brands have an accurate descriptive name such as Ground Bone, Dried Blood, Tankage, Nitrate of Soda, Muriate of Potash, etc. The remaining 25% have a combination name consisting of a descriptive part frequently more or less misleading and numerals giving the percentage composition of ammonia, total phosphoric acid and water-soluble potash. The use of numerals is a highly satisfactory method of identifying the different brands although this information is furnished in the guaranteed analysis. In reading the numerals in the brand name the purchaser must remember that the nitrogen is expressed in terms of its equivalent in ammonia and the phosphoric acid in terms of total rather than available phosphoric acid. In selecting fertilizers the consumer should give attention to the guaranteed analysis and to the nature of the materials of which it is composed rather than to the brand name.

THE PRICE OF FERTILIZERS.

The following prices are those paid at retail by the consumers in this state as furnished by the Inspector, compared with those taken from a Report on the Retail Prices of Nitrate of Soda and Acid Phosphate as of May 1, 1919, published by the Bureau of Soils, United States Department of Agriculture, Department Circular 39. In this report it is stated that the wholesale price of 16% acid phosphate in New York remained at $18.00 per ton from February, 1918, to October of the same year. In November the average quotation was $17.67, from December to February it was $17.00, in March, $16.87, and in April, $16.22, the same prices prevailing on May 1. The average retail price per ton as reported by the county agents in the New England States was $29.50. The New Hampshire inspector collected five samples of 16% acid phosphate on which the retail price per ton varied as follows: $26.00, $32.00, $33.00, $35.00 and $40.00. The average price of these five samples was $33.00 per ton. The report does not give figures for New Hampshire but gives the average retail price per ton of 16% acid phosphate for three other New England states as follows: Vermont, $27.50, Massachusetts, $29.50, and Connecticut, $30.00. These figures indicate that most New Hampshire consumers paid too high a price for acid phosphate. To further illustrate that the consumer of commercial fertilizers must exercise care in buying, the following retail prices per ton of the five samples of dried pulverized sheep manure collected this year are given as follows: $50.00, $53.00, $60.00, $68.00, $70.00. Comparing the above extreme prices with the figures obtained by the analysis of the respective samples it is found that the sample which retailed at $50.00 per ton actually contained about 15% more of nitrogen, of total phosphoric acid and of water soluble potash than the sample which retailed at $70.00 per ton.

Regarding the price of fertilizers for the immediate future the United States Department of Agriculture has made the announcement under date of June 18, 1919, that consumers of fertilizers should be able to obtain their mixed fertilizers for the fall season of 1919 at an average price of about 30% lower than the prices which prevailed for the spring season just passed.

Table I shows maximum f. o. b. prices at which the principal fertilizer grades should be obtained by dealers, or by consumers ordering 30-ton lots, at the three great centers for fertilizer distribution, viz.: Carteret, N. J., Philadelphia, Pa., and Baltimore, Md.

TABLE I.

The United States Department of Agriculture reports the following maximum f. o. b. prices at which principal grades of fertilizers might be obtained in 30-ton lots at three trade centers.*

Ammonia NH_3	Phosphoric acid P_2O_5	Potash K_2O	Price per
0	8	3	$25.75
..	..	4	28.75
..	..	5	31.75
0	9	2	23.75
0	10	1	21.75
..	..	2	24.75
..	..	3	27,50
..	..	4	30.50
..	..	5	33.50
0	12	1	23.50
..	..	2	26.50
..	..	3	29.50
..	..	4	32.25
..	..	5	35.25
1	8	0	22.00
..	..	1	25.00
..	..	2	28.00
..	..	3	30.75
..	..	4	33.75
..	..	5	36.75
1	9	0	23.00
..	..	1	25.75
..	..	2	28.75
..	..	3	31.75
1	10	0	23.75
..	..	1	26.75
1	12	0	25.50
..	..	1	28.50
2	8	0	27.00
..	..	1	30.00
..	..	2	33.00
..	..	3	35.75
..	..	5	41.75
2	9	1	30.75
2	10	0	28.75
..	..	1	31.75
..	..	2	34.75
..	..	4	40.00
..	..	6	46.50
2	12	0	30.50
..	..	2	36.50
3	8	1	35.00
..	..	2	38.00
..	..	3	40.75
3	9	1	35.75
3	10	0	33.75
..	..	1	36.75
..	..	4	45.50
..	..	6	51.25
4	8	0	37.00
..	..	1	40.00
..	..	2	42.75
..	..	3	45.75
..	..	4	48.75
..	..	6	54.50
4	9	1	40.75
4	10	0	38.75
..	..	1	41.75
..	..	2	44.75
..	..	3	47.50
..	..	6	56.25

* Bureau of Soils, U. S. Department of Agriculture, Circular No. 39.

To the above f. o. b. prices $4.50 per ton must be added for freight to delivery points in New England. To consumers ordering less than 30-ton lots there must be added to these prices a fair profit to the dealer which usually amounts to about $2.00 per ton.

The purpose of including the above table and discussion of prices in this report is to furnish to consumers information as to the maximum prices at which fertilizer supplies should be obtained, and particularly to prevent as far as possible a repetition of the wide variation of prices paid by consumers to dealers for fertilizers delivered during the period covered by this inspection.

ANALYSES OF BRANDS.

Mr. P. Bruce Place assisted in the following analytical work. In the table of analyses the different brands are arranged alphabetically under the name of the manufacturer. The manufacturers are also arranged in alphabetical order.

Analyses of Brands.

MANUFACTURER AND BRAND.	NITROGEN.				PHOSPHORIC ACID.				POTASH.	
	Total.				Total.		Available.			
	Guaranteed.	Found.	Inorganic.	Organic.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.	Found.
AMERICAN AGRICULTURAL CHEMICAL COMPANY, New York, N. Y.										
Ammoniated Fertilizer A	0.82	1.12	0.56	0.56	11.00	14.20	10.00	12.60	....	....
Ammoniated Fertilizer AA	1.65	1.94	0.92	1.02	11.00	12.50	10.00	11.10	....	....
Ammoniated Fertilizer AAA	2.47	2.80	1.59	1.21	11.00	12.60	10.00	10.70	....	....
Bradley's Corn Phosphate, 1916	1.65	1.75	0.92	0.83	11.00	13.00	10.00	10.80	1.00	1.11
Bradley's Grain Fertilizer	0.82	1.10	0.54	0.56	11.00	13.50	10.00	11.80	....	....
Bradley's Potato Fertilizer, 1919	1.65	1.72	0.79	0.93	11.00	12.70	10.00	10.50	1.00	1.38
Bradley's Potato Manure, 1916	2.47	3.67	2.35	1.32	11.00	11.70	9.00	10.20	1.00	1.48
Bradley's Root Crop Manure	3.29	3.22	1.83	1.39	11.00	13.10	10.00	11.65	....	....
Bradley's Special Corn Phosphate without Potash	1.65	1.66	0.92	0.74	11.00	11.70	10.00	10.10	....	....
Bradley's Special Eclipse Phosphate	0.82	1.12	0.49	0.63	9.00	11.10	8.00	9.35	1.00	1.02
Bradley's Special Potato Fertilizer without Potash	1.65	1.96	0.92	1.04	11.00	11.80	10.00	10.20	....	....
Bradley's Special XL Super Phosphate without Potash	2.47	2.56	0.49	2.07	11.00	11.50	10.00	10.05	....	....
Cereal and Root Fertilizer	2.47	2.39	1.37	1.02	11.00	12.10	10.00	10.70	....	....
Crocker's Ammoniated Corn Phosphate, 1916	2.06	2.27	1.31	0.96	9.00	9.90	8.00	8.10	1.00	1.25
Crocker's Potato, Hop and Tobacco Fertilizer, 1916	2.06	2.35	1.41	0.94	11.00	12.70	10.00	10.85	1.00	1.06
Extra Quality Potato Manure	4.11	3.92	2.77	1.15	11.00	12.50	10.00	11.30	....	....
Fine Ground Bone	2.47	2.69	...	...	22.88	24.55	....	....	....	....
General Crop Grower, 1919	1.65	2.14	1.44	0.70	11.00	13.40	10.00	11.65	1.00	1.05
Grain and Seeding Fertilizer	1.65	2.08	0.96	1.12	11.00	12.90	10.00	11.10	....	....
Great Eastern Northern Corn Special, 1916	2.06	2.22	1.38	0.84	9.00	12.30	8.00	10.80	1.00	1.12
Great Eastern Potato Manure, 1916	2.06	2.07	1.17	0.90	11.00	11.90	10.00	10.00	1.00	1.15
Odorless Grass and Lawn Top Dressing without Potash	4.11	4.14	2.98	1.16	11.00	13.10	10.00	11.95	....	....
Pacific Special Potato Fertilizer without Potash	1.65	1.91	0.84	1.07	11.00	11.80	10.00	10.65	....	....
16% Plain Super Phosphate	....	....	...	...	17.00	17.80	16.00	16.55	....	....
Quinnipiac Special Corn Manure without Potash	1.65	1.90	0.82	1.08	11.00	12.70	10.00	11.00	....	....

Quinnipiac Special Potato Phosphate without Potash	1.65	2.07	0.88	1.19	11.00	11.90	10.00	10.20	....	....
Special Soluble Pacific Guano without Potash	1.65	1.69	1.07	0.62	11.00	13.20	10.00	11.30	....	....
Special Vegetable Fertilizer	3.29	3.41	2.46	0.95	11.00	12.50	10.00	11.15	....	....
Williams & Clark Special Americus Corn Phosphate without Potash	1.65	1.90	0.98	0.92	11.00	12.30	10.00	10.70	....	....
Williams & Clark Special Americus Potato Manure without Potash	1.65	1.77	0.95	0.82	11.00	12.60	10.00	10.10	....	....
ARMOUR FERTILIZER WORKS, Chrome, N. J.										
Armour's Acid Phosphate	....	....	...	...	16.50	17.60	16.00	16.10	....	....
Armour's Crop Grower	0.82	0.89	0.36	0.53	8.50	10.60	8.00	9.40	2.00	2.04
Armour's Grain Grower	1.65	1.76	0.82	0.94	8.50	10.50	8.00	9.15	2.00	1.71
Armour's 4-10 Fertilizer	3.29	3.38	1.65	1.73	10.50	12.20	10.00	11.40	....	....
Armour's 2-10 Fertilizer	1.65	1.73	0.74	0.99	10.50	11.40	10.00	10.10	....	....
Armour's 2-8-3 Fertilizer	1.65	1.91	1.00	0.91	8.50	10.20	8.00	8.40	3.00	2.79
Armour's Sheep Manure	1.23	1.27	...	...	1.00	1.70	....	....	2.50	2.77
Armour's Wheat Corn and Oat Special	0.82	1.06	0.58	0.48	7.50	9.90	7.00	8.20	1.00	1.25
BOWKER FERTILIZER COMPANY, Boston, Mass.										
Bowker's 16% Acid Phosphate	....	....	...	...	17.00	19.10	16.00	16.40	....	....
Bowker's Three Ten All Round	2.47	2.46	1.63	0.83	11.00	12.70	10.00	10.60	....	....
Bowker's Three Eight Three Complete	2.47	2.63	1.90	0.73	9.00	11.30	8.00	8.95	3.00	3.02
Bowker's Two Ten Farm, and Garden	1.65	1.84	0.89	0.95	11.00	13.60	10.00	11.25	....	....
Bowker's Four Ten Hill and Drill	3.29	3.36	2.24	1.12	11.00	12.30	10.00	10.90	....	....
Bowker's One Ten Sure Crop	0.82	0.84	0.44	0.40	11.00	12.80	10.00	10.35	....	....
Bowker's Potato Phosphate, 1916	1.65	1.83	1.14	0.69	11.00	13.90	10.00	11.25	1.00	1.20
Stockbridge General Crop Manure, 1916	3.29	3.36	2.38	0.98	10.00	12.30	9.00	11.20	1.00	1.56
Stockbridge Market Garden Manure	3.29	3.15	2.27	0.88	9.00	11.10	8.00	9.45	4.00	4.05
JOSEPH BRECK & SONS, Boston, Mass.										
Breck's Ram's Head Brand Pulverized Sheep Manure	1.65	2.04	...	...	1.00	1.51	....	....	1.50	2.35
BUFFALO FERTILIZER WORKS, Buffalo, N. Y.										
Buffalo Farmer's Choice	0.82	1.06	0.47	0.59	11.00	14.00	10.00	12.30	....	....
Buffalo Garden Truck	3.30	3.41	1.47	0.94	11.00	11.50	10.00	10.30	....	....
Buffalo General Favorite, 1-8-1	0.80	0.96	0.40	0.56	9.00	10.00	8.00	8.20	1.00	1.02
Buffalo New England Special	**1.60**	**1.76**	**1.09**	**0.67**	**11.00**	**13.00**	**10.00**	**11.40**	....	....

Analyses of Brands—Continued.

MANUFACTURER AND BRAND.	NITROGEN.				PHOSPHORIC ACID.				POTASH.	
	Total.				Total.		Available.			
	Guaranteed.	Found.	Inorganic.	Organic.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.	Found.
Buffalo Onion, Vegetable and Potato	2.50	2.52	1.26	1.26	11.00	14.10	10.00	12.40	....	....
Buffalo Tip Top	0.80	0.86	0.43	0.43	9.00	11.20	8.00	9.70	2.00	1.98
Buffalo Triumph, 2-8-2	1.60	1.66	1.07	0.59	9.00	11.20	8.00	9.00	2.00	2.06
BURLINGTON RENDERING COMPANY, Burlington, Vt.										
Burlington Ground Steam Bone	2.47	4.02	...	...	20.00	23.50	....	....	....	....
CHICAGO FEED & FERTILIZER COMPANY, Osborn, Ill.										
Magic Brand Pulverized Sheep Manure	1.85	1.86	...	...	1.50	2.05	....	....	1.25	1.90
COE-MORTIMER COMPANY, New York, N. Y.										
E. Frank Coe's XXV Ammoniated Phosphate, 1916	0.82	1.21	0.58	0.63	11.00	13.75	10.00	12.05	....	....
E. Frank Coe's Columbian Corn and Potato Fertilizer, 1916	1.23	1.30	0.68	0.62	11.00	12.30	10.00	10.30	1.00	1.56
E. Frank Coe's High Grade Ammoniated Super-Phosphate, 1916	2.47	2.53	1.59	0.94	11.00	13.35	10.00	11.55	....	....
E Frank Coe's New England Special, 1916	0.82	1.20	0.51	0.69	9.00	10.00	8.00	8.90	1.00	1.99
E. Frank Coe's Original Ammoniated Dissolved Phosphate, 1916	1.65	1.83	0.85	0.98	11.00	13.25	10.00	11.15	....	....
E. Frank Coe's Prolific Crop Producer, 1916	3.29	3.74	2.28	1.46	11.00	13.25	10.00	11.80	....	....
E. Frank Coe's Standard Potato Fertilizer, 1916	3.29	3.62	2.71	0.91	10.00	10.65	9.00	9.65	1.00	1.06
JOHN C. DOW COMPANY, Boston, Mass.										
Dow's Garden Fertilizer	3.70	4.42	2.18	2.24	15.00	18.10	12.00	14.40	....	....

ESSEX FERTILIZER COMPANY, Boston, Mass.										
Essex 2-8-2	1.64	1.94	0.64	1.30	9.00	10.70	8.00	9.50	2.00	2.12
Essex Fish Fertilizer 3-10	2.46	2.57	1.17	1.40	11.00	13.40	10.00	11.60	....	....
Essex Grain, Grass and Potato Fertilizer 1-10	0.82	1.21	0.36	0.85	11.00	13.70	10.00	12.20	....	....
Essex Market Garden 3½-10	2.87	2.92	1.19	1.73	11.00	13.60	10.00	10.40	....	....
Essex Potato Phosphate, 4-10	3.28	3.01	2.04	0.97	11.00	13.70	10.00	11.90	....	....
LISTER'S AGRICULTURAL CHEMICAL COMPANY, Newark, N. J.										
Lister's Corn and Potato Fertilizer	2.06	2.07	1.40	0.67	9.00	12.10	8.00	10.80	1.00	1.05
Lister's Grain and Grass Fertilizer	....	....	...	...	11.00	13.40	10.00	12.10	2.00	2.04
Lister's High Grade Special for Spring Crops	2.06	2.27	1.47	0.80	11.00	13.10	10.00	11.80	1.00	1.05
Lister's Plant Food	0.82	1.16	0.88	0.28	11.00	13.00	10.00	11.50	....	....
Lister's Special Potato Fertilizer, 1916	4.11	4.32	3.15	1.17	11.00	12.40	10.00	10.30	....	....
Lister's Success Fertilizer 1916	1.23	1.84	0.89	0.95	11.00	12.10	10.00	10.50	1.00	0.96
LOWELL FERTILIZER COMPANY, Boston,										
Acid Phosphate	....	....	...	...	17.00	20.10	16.00	17.60	....	....
Dried Blood	9.84	9.97	...	...	....	....	....	....	....	....
Ground Bone	2.05	2.24	...	...	20.00	26.10	....	....	....	....
Ground Tankage	5.00	5.61	...	...	14.00	12.75	....	....	....	....
Nitrate of Soda	5.00	15.07	...	...	....	....	....	....	....	....
Potash	....	....	...	...	....	....	....	....	41.72	43.41
Lowell 2-8-4	1.64	2.08	0.68	1.40	9.00	10.90	8.00	9.65	4.00	4.09
Lowell Animal Brand 3½-10	2.87	3.02	1.24	1.78	11.00	14.00	10.00	10.80	....	....
Lowell Bone Fertilizer 2½-10	2.05	2.25	0.44	1.81	11.00	14.30	10.00	12.20	....	....
Lowell Empress Brand 1½-10	1.23	1.47	0.30	1.17	11.00	14.05	10.00	11.75	....	....
Lowell 2-8-2 Farm and Garden	1.64	1.93	0.95	0.98	9.00	11.20	8.00	9.80	2.00	1.76
Lowell Lawn and Garden Dressing 4-7-2	3.26	3.50	3.01	0.49	8.00	11.20	7.00	9.15	2.00	2.60
Lowell 3-10 Potato Manure	2.46	2.78	1.54	1.24	11.00	13.10	10.00	10.90	....	....
Lowell Potato Phosphate 4-10	3.28	3.19	1.94	1.25	11.00	13.80	10.00	11.85	....	....
Lowell Sterling Phosphate 1-10	0.82	1.05	0.25	0.80	11.00	13.20	10.00	11.90	....	....
MANCHESTER RENDERING COMPANY, Manchester, N. H.										
Manchester Ground Steam Bone	**2.05**	**2.63**	...	...	**26.00**	**26.50**	....	....	....	....

Analyses of Brands—Continued.

MANUFACTURER AND BRAND.	NITROGEN.				PHOSPHORIC ACID.				POTASH.	
	Total.				Total.		Available.			
	Guaranteed.	Found.	Inorganic.	Organic.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.	Found.
Manchester Potato Fertilizer	2.16	2.64	0.81	1.83	12.00	17.00	10.00	13.60	2.00	2.10
THE NATIONAL FERTILIZER COMPANY, New York, N. Y.										
National XXX Fish and Potash, 1916	2.06	2.17	1.28	0.89	11.00	13.10	10.00	11.40	1.00	1.24
National Nitrogen Phosphate Mixture, No. 3	2.47	2.84	1.73	1.11	11.00	12.80	10.00	11.50	....	....
National Universal Grain and Potato Fertilizer	0.82	1.10	0.53	0.57	9.00	10.10	8.00	8.70	1.00	1.12
NATURAL GUANO COMPANY, Aurora, Ill.										
Pulverized Sheep Manure (Sheep's Head Brand)	2.25	2.28	...	...	1.25	2.50	....	....	1.50	1.99
NEW ENGLAND FERTILIZER COMPANY, Boston, Mass.										
New England 2-8-4	1.64	2.13	0.61	1.52	9.00	10.40	9.00	9.20	4.00	4.86
New England Corn and Grain Fertilizer 1½-10	1.23	1.48	0.29	1.19	11.00	13.40	10.00	11.15	....	....
New England Corn Phosphate 2½-10	2.05	2.29	0.29	2.00	11.00	13.25	10.00	11.10	....	....
New England High Grade Potato Fertilizer 4-10	3.28	3.37	2.28	1.09	11.00	12.75	10.00	10.75	....	....
New England Potato Fertilizer 3-10	2.46	2.70	1.05	1.65	11.00	14.20	10.00	12.25	....	....
New England Super-Phosphate 3½-10	2.87	2.92	1.23	1.69	11.00	15.20	10.00	12.10	....	....
NEW MINERAL FERTILIZER COMPANY, Boston, Mass.										
Wonder Mineral Plant Food	....	....	...	...	0.23	0.55	....	....	2.09	0.07

NITRATE AGENCIES CORPORATION, New York, N. Y.										
N. A. C. Brand High Grade Acid Phosphate	....	....	...	...	17.00	18.90	16.00	17.35	....	....
PARMENTER & POLSEY FERTILIZER COMPANY, Boston, Mass.										
P. & P. Potato Fertilizer 2½-10	2.05	2.14	0.25	1.89	11.00	14.20	10.00	12.10	....	....
PULVERIZED MANURE COMPANY, Chicago, Ill.										
Wizard Brand Sheep Manure	1.80	1.77	...	...	....	2.40	1.00	1.90	1.00	1.67
THE ROGERS & HUBBARD COMPANY, Portland, Conn.										
Rogers & Hubbard Complete Phosphate	1.00	1.19	0.78	0.41	8.00	9.50	7.50	8.40	....	....
Rogers & Hubbard Potato Phosphate	2.00	2.42	1.48	0.94	15.00	16.20	14.00	14.00	....	....
M. L. SHOEMAKER COMPANY, Philadelphia, Pa.										
Swift-Sure for Tobacco and General Use	3.29	3.31	1.83	1.48	12.00	14.80	9.00	11.20	....	....

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